

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-53. Cancelled.

Claim 54. (New) A process for producing a peptide having desired biological activity, comprising the steps of:

- (1) culturing cells transformed with an expression vector having a nucleotide sequence encoding a fusion protein comprising:

- (a) a protective peptide, and

- (b) a peptide of interest connected to a helper peptide via cleavage site,

wherein said protective peptide, said peptide of interest, and said helper peptide each have a different isoelectric point prior to use in said fusion protein;

and then harvesting said fusion protein from said culture, wherein said helper peptide has 5 to 50 amino acid residues and is designed so that the isoelectric point of the peptide of interest connected to a helper peptide is between 8 and 12, and further wherein there are cleavage

sites between the protective peptide, the helper peptide, and the peptide of interest so that the fusion protein formed by said peptides contains two cleavage sites;

(2) cleaving off from said fusion protein said peptide of interest connected to a helper peptide via cleavage site, and purifying said peptide of interest connected to a helper peptide via cleavage site as desired;

(3) cleaving off from said peptide of interest connected to a helper peptide via cleavage site obtained in step (2), said peptide of interest; and

(4) purifying said peptide of interest obtained in step (3).

Claim 55. (New) The process according to claim 54, wherein said protective peptide has 30 to 200 amino acid residues.

Claim 56. (New) The process according to claim 54, wherein an ion exchange resin is used in the purification process.

Claim 57. (New) The process according to claim 56, wherein said ion exchange resin is a cation exchange resin.

Claim 58. (New) The process according to claim 54, wherein a reverse phase chromatography or a hydrophobic chromatography is used in the purification process.

- Claim 59. (New) The process according to claim 54, wherein a surfactant and/or a salt are added in at least one of steps (1) to (4) to maintain the solubility of said peptide of interest.
- Claim 60. (New) The process according to claim 54, wherein said cells are prokaryotic or eukaryotic cells.
- Claim 61. (New) The process according to claim 60, wherein said cells are *Escherichia coli* cells.
- Claim 62. (New) The process according to claim 54, wherein said peptide of interest is an amidated peptide.
- Claim 63. (New) The process according to claim 54, wherein said peptide of interest is a glucagon-like peptide-1 derivative having insulinotropic activity.
- Claim 64. (New) The process according to claim 63, wherein said glucagon-like peptide-1 derivative having insulinotropic activity has an isoelectric point of 4.5 to 9.0.

- Claim 65. (New) The process according to claim 63, wherein said glucagon-like peptide-1 derivative having insulintropic activity has an isoelectric point of 5.5 to 7.5.
- Claim 66. (New) The process according to claim 63, wherein the purity of said glucagon-like peptide-1 derivative obtained having insulintropic activity is 98% or greater.
- Claim 67. (New) The process according to claim 54, wherein said peptide of interest obtained in step (2) is subjected to a modification reaction to obtain a modified peptide.
- Claim 68. (New) The process according to claim 67, wherein said modification reaction is an amidation.
- Claim 69. (New) The process according to claim 68, wherein said peptide of interest is a glucagon-like peptide-1 derivative having insulintropic activity.
- Claim 70. (New) The process according to claim 69, wherein said glucagon-like peptide-1 derivative having insulintropic activity has an isoelectric point of 4.5 to 9.0.

- Claim 71. (New) The process according to claim 69, wherein said glucagon-like peptide-1 derivative having insulinotropic activity has an isoelectric point of 5.5 to 7.5.
- Claim 72. (New) An expression vector comprising a nucleotide sequence encoding a fusion protein comprising a protective peptide and a peptide of interest having a helper peptide added thereto, wherein said protective peptide, said peptide of interest, and said helper peptide each have a different isoelectric point prior to use in said fusion protein, further wherein said helper peptide has 5 to 50 amino acid residues and is designed so that the isoelectric point of said peptide of interest that has the helper peptide added thereto is between 8 and 12, and further wherein there are cleavage sites between said protective peptide, said helper peptide, and said peptide of interest so that the fusion protein formed by said peptides contains two cleavage sites.
- Claim 73. (New) A prokaryotic or a eukaryotic cell transformed with the expression vector of claim 72.
- Claim 74. (New) An expression vector according to claim 72, wherein said peptide of interest is a glucagon-like peptide-1 derivative.
- Claim 75. (New) A prokaryotic or eukaryotic cell according to claim 73, wherein said peptide of interest is a glucagon-like peptide-1 derivative.

- Claim 76. (New) An *Escherichia coli* cell transformed with the expression vector of claim 72.
- Claim 77. (New) An *Escherichia coli* cell transformed with the expression vector of claim 72, wherein said peptide of interest is a glucagon-like peptide-1 derivative.
- Claim 78. (New) The process according to claim 54, wherein the order of said protective peptide, said peptide of interest, and said helper peptide contained within said fusion protein is, read from N-terminus to C-terminus: helper peptide, peptide of interest, protective peptide.
- Claim 79. (New) The process according to claim 54, wherein the order of said protective peptide, said peptide of interest, and said helper peptide contained within said fusion protein is, read from N-terminus to C-terminus: protective peptide, helper peptide, peptide of interest.
- Claim 80. (New) The process according to claim 54, wherein the order of said protective peptide, said peptide of interest, and said helper peptide contained within said fusion protein is, read from N-terminus to C-terminus: protective peptide, peptide of interest, helper peptide.

- Claim 81. (New) The process according to claim 54, wherein the order of said protective peptide, said peptide of interest, and said helper peptide contained within said fusion protein is, read from N-terminus to C-terminus: peptide of interest, helper peptide, protective peptide.
- Claim 82. (New) An isolated amino acid sequence comprising SEQ ID NO:20.
- Claim 83. (New) An isolated amino acid sequence consisting of SEQ ID NO:20.
- Claim 84. (New) An isolated amino acid sequence comprising SEQ ID NO:21.
- Claim 85. (New) An isolated amino acid sequence consisting of SEQ ID NO:21.
- Claim 86. (New) An isolated amino acid sequence comprising SEQ ID NO:22.
- Claim 87. (New) An isolated amino acid sequence consisting of SEQ ID NO:22.
- Claim 88. (New) An isolated amino acid sequence comprising SEQ ID NO:23.
- Claim 89. (New) An isolated amino acid sequence consisting of SEQ ID NO:23.
- Claim 90. (New) The fusion protein of Claim 72, wherein said helper peptide comprises SEQ ID NO:5.

- Claim 91. (New) The fusion protein of Claim 72, wherein said helper peptide comprises SEQ ID NO:8.
- Claim 92. (New) An isolated amino acid sequence consisting of SEQ ID NO:27.
- Claim 93. (New) The fusion protein of Claim 72, wherein said protective peptide consists of amino acid numbers 1-98 of SEQ ID NO:20.
- Claim 94. (New) The process according to Claim 54, wherein the peptide of interest is selected from the group consisting of the peptides of SEQ ID NOS: 27 to 70.
- Claim 95. (New) The process according to Claim 54, wherein the peptide of interest is selected from the group consisting of the peptides of SEQ ID NOS: 27 and 28.
- Claim 96. (New) The process according to Claim 54, wherein the peptide of interest is the peptide of SEQ ID NO: 27.
- Claim 97. (New) A process for producing a peptide having desired biological activity, comprising the steps of:
- (1) culturing cells transformed with an expression vector having a nucleotide sequence encoding a fusion protein comprising:

(a) a protective peptide, and

(b) a peptide of interest connected to a helper peptide via cleavage site,

wherein said protective peptide, said peptide of interest, and said helper peptide each have a different isoelectric point prior to use in said fusion protein;

and then harvesting said fusion protein from said culture, wherein said helper peptide has 5 to 50 amino acid residues and is designed so that the isoelectric point of the peptide of interest connected to a helper peptide is between 8 and 12, and further wherein there are cleavage sites between the protective peptide, the helper peptide, and the peptide of interest so that the fusion protein formed by said peptides contains two cleavage sites;

- (2) cleaving off from said fusion protein said peptide of interest connected to a helper peptide via cleavage site, and purifying said peptide of interest connected to a helper peptide via cleavage site as desired;
- (3) cleaving off from said peptide of interest connected to a helper peptide via cleavage site obtained in step (2), said peptide of interest; and
- (4) purifying said peptide of interest obtained in step (3)

wherein the fusion protein is a protein as described by any one of claims 82 to 91 or 93.